

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/012748

International filing date (day/month/year)
08.11.2004

Priority date (day/month/year)
27.11.2003

International Patent Classification (IPC) or both national classification and IPC
C07K19/00

Applicant
UNILEVER PLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/012748

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☒ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☒ in written format
☒ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☒ furnished subsequently to this Authority for the purposes of search.
3. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43*bis*.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

Reference is made to the following documents:

- D1:** WO 01/46357 A (UNILEVER N.V; UNILEVER PLC; HINDUSTAN LEVER LTD) 23 June 2001 (2001-06-28)
- D2:** WO 03/089019 A (THE PROCTER & GAMBLE COMPANY) 30 October 2003 (2003-10-30)
- D3:** WO 01/49817 A (BASF AKTIENGESELLSCHAFT; JAHNS, EKKEHARD; BOECKH, DIETER; BERTLEFF, WE) 12 July 2001 (2001-07-12)
- D4:** US-A-5 593 850 (WETEGROVE ET AL) 14 January 1997 (1997-01-14)
- D5:** US-B1-6 750 328 (WETEGROVE ROBERT L ET AL) 15 June 2004 (2004-06-15); P-document; published in interval

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. **Introduction:** This application is a continuation of a previous application, published as WO 01/46357 (**D1**), and considered to be the closest prior art document. In D1 the fusion protein also has a **cellulose** binding domain (CBD) and a domain having a high binding affinity for another ligand, which can be for instance a Benefit Agent like a perfume or micro-particles loaded with the Benefit Agent (see claim 13 of D1). In the present application the ligand is defined as a microcapsule having melamine as a chemical component (i.e. it is presently not defined that the fusion protein binds to melamine, only to the microcapsule) and the capsules being the carrier of the Benefit Agent like a perfume.
2. The present application appears to meet the criteria of Article 33(1) PCT, because the subject-matter of the claims is new in the sense of Article 33(2) PCT: no prior art document like D1 has referred specifically to micro-particles comprising a melamine based chemical component.
3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of all claims does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of the main claim differs from the disclosure of D1 in the specifying of the melamine based chemical component in the micro-particles.

The problem to be solved by the present invention may therefore be regarded as the finding of a deposition aid of microcapsules comprising a melamine based chemical component.

The solution proposed in **claim 1** of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

The skilled person is taught by D1 that in general a fusion protein for solving the technical problem can comprise, as domain having a high binding affinity, a domain directed at micro-particles which are loaded with the benefit agent (see claim 13). Moreover, D1 mentions (see section 1.2.1 on page 5) that antibodies can be generated that are specific for almost any protein, organic molecule, or cell surface, that is likely to be encountered. This statement in D1 is confirmed with respect to antibodies directed to polymers, as mentioned in **D4**. It is therefore considered that the finding of antibodies against polymers based on melamine is obvious to the skilled person.

It is additionally noted that also the specifying of microcapsules having melamine as a chemical component and their use as carriers of Benefit Agents is known from the prior art (see **D2** and **D3**).

4. None of the other (depending) **claims 2-8 and 10-13** contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, see eg document D1 concerning detergent compositions containing the fusion protein, the CBD of Trichoderma and the domain of high binding affinity an antibody as found in Camelidae.
5. **Claim 9:** at present this claim does not fulfill the requirements of Article 6 of the PCT: the mere combination of digits and letters is not clear. The inclusion (by reference) of the claimed sequences would overcome this objection. However, a lack of inventive step appears also to be present in this case as the specified DNA sequences are

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arbitrary options available to the skilled person to find antibodies binding to melamine.

In this respect your attention is also drawn to the intermediate document **D5**, referring also to melamine binding antibodies.
